CLAIMS

What is claimed is:

1. An optical recording medium copying apparatus, comprising:

a transmitting optical recording medium drive in which a first optical recording medium is inserted, and which transmits data recorded on the inserted first optical recording medium when both a predetermined power and a copying signal are applied to the transmitting optical recording medium drive;

a receiving optical recording medium drive in which second optical recording medium is inserted, which receives the data from the transmitting optical recording medium drive when both a predetermined power and a copying signal are applied to the receiving optical recording medium drive, and which records the received data on the inserted second optical recording medium; and

communication lines between the transmitting and receiving optical recording medium drives used to transmit the data recorded on the first optical recording medium in the transmitting optical recording medium drive to the second optical recording medium in the receiving optical recording medium drive.

2. The apparatus of claim 1, wherein the communication lines serially transmit the data recorded on the first optical recording medium in the transmitting optical recording medium drive to the second optical recording medium in the receiving optical recording medium drive.

3. The apparatus of claim 1, wherein the transmitting optical recording medium drive comprises:

a disc type determination unit which determines a type of the first optical recording medium inserted into the transmitting optical recording medium drive;

a disc related information decoding unit which decodes disc related data recorded in a lead-in area of the first optical recording medium;

a decoding unit which decodes program area data recorded in a program area of the first optical recording medium; and

a controller controlling transmission of the decoded disc related data recorded in the lead-in area and the decoded program area data recorded in the program area of the first optical recording medium to the receiving optical recording medium drive, controlling transmission of a signal to the receiving optical recording medium drive, when a copying key is pressed, the copying key installed outside the transmitting optical recording medium drive,, and controlling transmission of a signal to the receiving optical recording medium drive indicating a state of the transmitting optical recording medium drive.

4. The apparatus of claim 3, further comprising a storage unit that stores the decoded disc related data and the decode program area data output from both the disc related information decoding unit and the decoding unit, respectively.

5. The apparatus of claim 3, wherein the disc type determination unit determines whether the first optical recording medium type is a stamp, a recordable or a rewritable optical recording medium containing audio data, video data, or data in a predetermined format.

6. The apparatus of claim 3, wherein the disc related information decoding unit decodes starting and ending points of lead-in area data and a program memory area (PMA) of the lead-in area of the first optical recording medium to decode the disc related data of the first optical recording medium, when the first optical recording medium is a recordable optical recording medium or a rewritable optical recording medium, the decoded disc related data including identification of the first optical recording medium and track information.

7. The apparatus of claim 3, wherein the disc related information decoding unit decodes starting and ending points of data and a table of content (TOC) area of the lead-in area of the first optical recording medium to decode the disc related data, including TOC information, of the first optical recording medium, when the optical recording medium is a stamp optical recording medium.

8. The apparatus of claim 3, wherein the disc related information decoding unit decodes information indicating whether the program area data is recorded on the first optical recording medium in units of tracks, sessions, or optical recording media.

9. The apparatus of claim 3, wherein the data recorded on the first optical recording medium is audio data, and the decoding unit decodes a sub-code, a sub-Q value, and the audio data.

10. The apparatus of claim 3, wherein the data recorded on the first optical recording

medium is video data, and the decoding unit decodes the video data and further checks whether an error has occurred in the decoded video data.

11. The apparatus of claim 3, wherein the data recorded on the first optical recording medium is in a predetermined format, and the decoding unit decodes the predetermined format data and further checks whether an error has occurred in the decoded predetermined format data.

12. The apparatus of claim 4, wherein the controller checks a capacity of the storage unit and discontinues storing the decoded disc related and program area data in the storage unit when the storage unit is full.

13. The apparatus of claim 4, wherein the controller controls transmission of the decoded program area data stored in the storage unit to the receiving optical recording medium drive in units of bytes.

14. The apparatus of claim 3, wherein the controller waits to receive a confirmation from the receiving optical recording medium drive when the transmitted decoded program area data amounts to a predetermined data block.

15. The apparatus of claim 14, wherein the transmission of the program area data is discontinued if the transmitting optical recording medium drive does not receive the confirmation.

16. The apparatus of claim 4, wherein the controller controls transmission of all decoded data stored in the storage unit to the receiving optical recording medium drive and sends a confirmation signal indicating termination of the data transmission to the receiving optical recording medium drive.

17. The apparatus of claim 1, wherein the receiving optical recording medium drive comprises:

a disc type determination unit which determines a type of the second optical recording medium on which the received data transmitted from the transmitting optical recording medium drive is recorded;

a storage unit which stores the received data transmitted from the transmitting optical recording medium drive;

a signal processor signal processing the received data stored in the storage unit to convert the received data into a recordable signal; and

a controller controlling sequential recording of the received converted data in a lead-in area, a program area, and a lead-out area of the second optical recording medium, and controlling transmission of a confirmation signal indicating a state of the receiving optical recording medium drive to the transmitting optical recording medium drive, when a copying key is pressed, the copying key installed outside the receiving optical recording medium drive.

18. The apparatus of claim 17, wherein the disc type determination unit informs the transmitting optical recording medium drive that the received data transmitted from the transmitting optical recording medium drive cannot be recorded on the second optical recording medium, when the type of the second inserted optical recording medium is determined to be an optical recording medium other than a recordable optical recording medium or a rewritable optical recording medium.

19. The apparatus of claim 17, wherein the disc type determination unit informs the transmitting optical recording medium drive that the received data transmitted from the transmitting optical recording medium drive cannot be recorded on the second optical recording medium, when the type of the second inserted optical recording medium is a stamp optical recording medium.

20. The apparatus of claim 17, wherein the disc type determination unit prepares the second inserted optical recording medium for the recording, when the second optical recording medium is an unused blank recordable optical recording disc or a used rewritable optical recording disc from which data has been erased.

21. The apparatus of claim 17, wherein the controller checks a capacity of the storage unit and controls recording of the received data on the second optical recording medium when a predetermined capacity of the storage unit occupied by the received data amounts to a predetermined level.

22. The apparatus of claim 17, wherein the controller uses the received converted

data stored in the storage unit to generate a sub-code and a sub-Q value for a program memory area (PMA) of the lead-in area, and to control recording second optical recording medium related information, the generated PMA sub-code, and the generated PMA sub-Q value in the PMA, the second optical recording medium related information including an identification of the second optical recording medium and track information.

23. The apparatus of claim 22, wherein the controller further generates a sub-code and a sub-Q value for a TOC area of the lead-in area after completing the recording in the PMA, and controls recording the TOC information, the generated TOC sub-code, and the generated TOC sub-Q value in the TOC area.

24. The apparatus of claim 23, wherein the controller further generates a sub-code and a sub-Q value for a pre-gap area of a certain block after completing the recording in the TOC area, and controls recording of the generated pre-gap area sub-code and the generated pre-page area sub-Q value in the pre-gap area.

25. The apparatus of claim 17, wherein the controller generates a sub-code and sub-Q value for the lead-out area after completing the recording of received converted program area data in the program area, and controls recording of the generated lead-out area sub-code and the generated lead-out area sub-Q value in the lead-out area.

26. The apparatus of claim 25, wherein the controller transmits a confirmation signal indicating recording termination to the transmitting optical recording medium drive after completing the recording in the lead-out area.

27. A method of copying an optical recording medium in an optical recording medium copying apparatus in which a transmitting optical recording medium drive operates when a predetermined power is applied to the transmitting drive and a receiving optical recording medium drive operates when a predetermined power is applied to the receiving drive and transmits or receives data using a communication line which is different from a communication line used by the transmitting optical recording medium drive, the method comprising:

determining types of optical recording media when the optical recording media are inserted into the transmitting and receiving optical recording medium drives and a copying signal is input to both these drives;

converting in the transmitting optical recording drive data recorded in a lead-in area and data recorded in a program area of the transmitting optical recording medium, into data for transmitting, and transmitting the converted data to the receiving optical recording medium drive;

sequentially recording in the receiving optical recording medium drive received data transmitted by the transmitting optical recording medium drive in a lead-in area and a program area of the receiving optical recording medium, generating lead-out area data to be recorded in a lead-out area of the receiving optical recording medium, and recording the generated lead-out area data in the lead-out area.

28. The method of claim 27, wherein the transmitting and receiving optical recording medium drives serially exchange data via the communication lines between the transmitting and receiving drives.

29. The method of claim 27, wherein the determining of the types of the optical recording media comprises determining whether the transmitting optical recording medium is a stamp, recordable or rewritable optical recording medium containing audio data, video data, or data of a particular format.

30. The method of claim 27, wherein the determining of the types of the optical recording media comprises informing the transmitting optical recording medium drive that the converted data transmitted from the transmitting optical recording medium drive cannot be recorded on the receiving optical recording medium, if determined that the receiving optical recording medium is an optical recording medium type other than a recordable optical recording medium or a rewritable optical recording medium.

31. The method of claim 27, wherein the determining of the types of the optical recording media comprises informing the transmitting optical recording medium drive that the converted data transmitted from the transmitting optical recording medium drive cannot be recorded on the receiving optical recording medium, if determined that the receiving optical recording medium is a stamp optical recording medium type.

32. The method of claim 27, wherein the determining of the types of the optical

recording media comprises preparing the receiving optical recoding media for the recording, if determined that the receiving optical recording medium is an unused blank recordable optical recording disc or a used rewritable optical recording disc from which data has been erased.

33. The method of claim 27, wherein the data conversion in the transmitting optical recording drive comprises:

decoding the data recorded in the lead-in area of the transmitting optical recording medium;

decoding the data recorded in the program area of the transmitting optical recording medium; and

transmitting the decoded data recorded in the lead-in area and the program area to the receiving optical recording medium drive.

34. The method of claim 33, wherein the decoding of the data in the lead-in area comprises detecting starting and ending points of lead-in area data and a program memory area (PMA) of the lead-in area and decoding an identification of the transmitting optical recording medium and track information based on the detecting, if the transmitting optical recording medium is a recordable optical recording medium or a rewritable optical recording medium.

35. The method of claim 33, wherein the decoding of the data in the lead-in area comprises detecting starting and ending points of table of content (TOC) data and a TOC area of the lead-in area, and decoding the TOC data based on the detecting, if the transmitting optical recording medium is a stamp optical recording medium.

36. The method of claim 33, wherein the decoding of the data in the lead-in area comprises decoding information indicating whether the program area data is recorded on the transmitting optical recording medium in units of tracks, units of sessions, or as a session of transmitting optical recording media.

37. The method of claim 33, wherein the decoding of the program area data comprises decoding a sub-code and a sub-Q value, if the transmitting optical recording medium contains audio data.

38. The method of claim 33, wherein if the transmitting optical recording medium

contains video data, the decoding of the program area data comprises decoding the video data and checking whether an error has occurred in the decoded video data.

39. The method of claim 33, wherein if the transmitting optical recording medium contains data of a particular format, the decoding of the program area data comprises decoding the particular format data and checking whether an error has occurred in the decoded particular format data.

40. The method of claim 33, wherein the decoded data transmission comprises transmitting in units of bytes.

41. The method of claim 33, wherein the decoded data transmission comprises waiting to receive a confirmation signal from the receiving optical recording medium drive when the transmitted decoded data amounts to a predetermined data block.

42. The method of claim 41, wherein the decoded data transmission comprises stopping transmission of the decoded data, if the transmitting optical recording medium drive does not receive the confirmation signal.

43. The method of claim 33, wherein the decoded data transmission comprises transmitting a confirmation signal indicating termination of the decoded data transmission to the receiving optical recording medium drive after transmission of all decoded data.

44. The method of claim 27, wherein the recording in the receiving optical recording medium drive comprises:

generating a sub-code and a sub-Q value for a program memory area (PMA) of the lead-in area of the receiving optical recording medium using the received data;

recording identification of the transmitting optical recording medium, track information, the generated PMA sub-code, and the generated PMA sub-Q value in the PMA;

generating a sub-code and a sub-Q value for a TOC area of the lead-in area of the receiving optical recording medium using the received data;

recording TOC information, the generated TOC sub-code, and the generated TOC sub-Q value in the TOC area;

generating a sub-code and a sub-Q value for a pre-gap area having predetermined blocks on the receiving optical recording medium using the received data;

recording the generated pre-gap area sub-code and the generated pre-gap area sub-Q value in the pre-gap area;

detecting program area data recorded in a program area of the transmitting optical recording medium from the received data;

recording the detected program area data in the program area of the receiving optical recording medium;

generating a lead-out area sub-code and a lead-out sub-Q value for the lead-out area of the receiving optical recording medium; and

recording the generated lead-out sub-code and the generated lead-out sub-Q value in the lead-out area, after the recording of the program area data in the program area.

45. The method of claim 27, wherein the recording in the receiving optical recording medium drive comprises transmitting a confirmation signal indicating termination of the recording to the transmitting optical recording medium.

46. An optical recording medium copying device, comprising:

a transmitting optical disc drive having a first copying button and transmitting data recorded on any optical disc type inserted in the transmitting drive, in response to the copying button activation; and

a receiving optical disc drive in communication with the transmitting drive and having a second copying button, the receiving drive receiving the data transmitted from the transmitting drive and recording the received data on any recordable optical disc type inserted in the receiving drive, in response to the second copying button activation.

47. The device of claim 46, wherein the data transmitted from the transmitting device comprises disc related information including program area data recording information indicating program area data recording in units of tracks, session, optical recordable discs, or variable and fixed packets.

48. An optical recording medium copying device applying power to two compact disc rewritable (CDRW) drives and in response to a copying signal input at the CDRW drives, respectively, copying data recorded on an optical recording medium inserted into one of the CDRW drives to an optical recording medium inserted in the other CDRW drive, without a PC

system and/or a recording application program.

49. A transmitting optical disc device to communicate with a receiving optical disc device that receives data transmitted from the transmitting optical disc device and recording the received data on any recordable optical disc type inserted in the receiving optical disc devic, the transmitting optical disc device comprising:

a transmitting copying button; and

a transmitting optical disc drive transmitting data recorded on any optical recording disc type inserted in the transmitting optical disc drive to the receiving optical disc device, in response to the transmitting copying button activation.

50. A receiving optical disc device to communicate with a transmitting optical disc device that transmits data recorded on any optical recording disc type inserted in the transmitting optical disc device, the receiving optical disc device, comprising:

a receiving copying button; and

a receiving optical disc drive receiving the data transmitted from the transmitting optical disc device and recording the received data on any recordable optical disc type inserted in the receiving optical disc drive.